SF Coop DER Regional Solutions Project

Contract #: 500-03-009
Contractor: M.Cubed
Subcontractors: Energy, Environ, Economics
Contract Amount: $595,647
Match Amount: $660,200
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Status: Active

Project Description:

This research will include an investigation of the costs, benefits and cost-effectiveness of Distributed Energy Resources (DER) options to customers, utilities and society, as well as the technical issues uncovered during the process. One major attribute of this study is looking at how DER affects the load profile on a specific PG&E distribution system feeder. The results will be reported appropriately for a number of audiences, including utilities, governments, energy consumers and other stakeholders interested in making informed decisions about DER programs.

For this project, the San Francisco (SF) Co-op, California's first urban cooperative, will provide a unique platform from which to offer and implement innovative, energy-saving and demand shifting, and environmentally friendly DER technologies. This setting provides the opportunity to examine the implications of DER for a full range of energy users (e.g., low to high income, multi-unit and single family residential, small to large commercial industrial) with a variety of energy demand strategies.

This project includes all of the key components of an electric system – generation, transmission, and distribution – and provides for a rich environment in which to investigate DER and related issues.

This project supports the PIER Program objectives of:

- Improving the reliability, quality and sufficiency of California's electricity by objectively assessing the costs and benefits of DER initiatives to relieve congestion on San Francisco's transmission and distribution network.
- Improving the energy cost/value of California's electricity by identifying and testing DG solutions that can help to lower peak demand and minimize the need for new investments in transmission, distribution, and generation facilities.
- Improving the environmental, public health, and safety of California's electricity by encouraging energy conservation, demand response, and the appropriate development of low-impact, environmentally friendly, DG facilities.

Proposed Outcomes:

1. Establish baseline characteristics of the study area distribution system feeders.
2. Identify the location of significant clusters of customers willing to implement DER technologies on PG&E's electricity distribution system.
3. Select distribution feeder for monitoring and data collection where an effect can be 'seen'.

4. Coordinate and facilitate with the California Public Utilities Commission (CPUC), PG&E, City and County of San Francisco, and the Commission and their respective programs to bring to bear their resources and incentives to create a test bed where sufficient amounts of DER can be implemented such that the hypothesis can be tested.
5. Work with customers on those feeders to obtain incentives from the external programs (e.g., CPUC, City and County of San Francisco, etc.) and have the DER technologies installed if they have not already been installed.
6. Issue price signals to residential participants in the CPUC's Dynamic Pricing Program in accordance to that program's rate structure and guidelines as established by the CPUC. In addition, the Contractor will work to implement demand-response programs focusing on businesses.
7. Monitor the effect of the price signals and installed DER technologies on the targeted distribution feeders.

Project Status:

- Baseline characteristics of the study area feeders have been established.
- Significant clusters of customers willing to implement DER technologies on PG&E's electricity distribution system have been identified and enrolled.
- A distribution feeders has been selected for monitoring and data collection and a second feeder is in the process of evaluation.